

Claims:

1. (previously presented) A pressure sensitive adhesive article, comprising:
a pressure sensitive adhesive layer mainly formed of polyurethane resin;
a release sheet base material having first and second surfaces and being formed from a material selected from the group consisting of a polyester film, a polypropylene film and a lint-free paper; and
a releasing agent layer provided on the first surface of the release sheet base material,

wherein the release agent layer is formed mainly of polyolefin resin, which has a numerical average molecular weight of about 15,000 to about 500,000 determined by GPC, and is adhered to the pressure sensitive adhesive layer,

wherein a wetting tension at the surface of the releasing agent layer which faces the pressure sensitive adhesive layer measured according to the wetting tension test defined by JIS K 6768 is equal to or less than 33 mN/m,

wherein the polyolefin resin is selected from the group consisting of polyethylene, polypropylene, ethylene copolymers, olefin-based thermoplastic elastomer, and a mixture of the foregoing,

wherein the polyurethane resin is obtained by reacting polyol and polyisocyanate, the polyol comprising at least one of polyester polyol and polyether polyol, and the polyisocyanate comprising at least one of aromatic polyisocyanate, aliphatic polyisocyanate, aromatic-aliphatic polyisocyanate and alicyclic polyisocyanate, and wherein an amount of the polyisocyanate to be compounded with respect to 100 parts by weight of the polyol is in the range of 1 to 30 parts by weight, and

wherein a mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group is larger than 1.

2. (cancelled)

3. (previously presented) The pressure sensitive adhesive article as claimed in claim 1, wherein the polyolefin resin has a density of equal to or less than 0.94 g/cm³.

4. (previously presented) The pressure sensitive adhesive article as claimed in claim 1, wherein the pressure sensitive adhesive article is a pressure sensitive adhesive sheet with a release sheet, which comprises:

a pressure sensitive adhesive sheet including a base material on which the pressure sensitive adhesive layer is provided, and

a release sheet including the release sheet base material on which the releasing agent layer is provided, the release sheet being removably attached to the pressure sensitive adhesive layer of the pressure sensitive adhesive sheet through the releasing agent layer thereof.

5. (original) The pressure sensitive adhesive article as claimed in claim 4, wherein even if the pressure sensitive adhesive sheet having the pressure sensitive adhesive layer contains silicone compound, the content thereof is 500 g/m² or less.

6. (previously presented) The pressure sensitive adhesive article as claimed in claim 4, wherein when the pressure sensitive adhesive sheet is used after it has been peeled off from the release sheet, and the pressure sensitive adhesive sheet generates a gas at a temperature of 85°C for 30 minutes, the amount of the gas generated from the pressure sensitive adhesive sheet is equal to or less than 20 mg/m².

7. (original) The pressure sensitive adhesive article as claimed in claim 4, wherein when the pressure sensitive adhesive sheet is used after it has been peeled off from the release sheet, the pressure sensitive adhesive sheet contains ions of NO_x⁻, Cl⁻, PO₄³⁻, F⁻, K⁺, Na⁺ and Ca²⁺, but the sum of amounts of these ions is equal to or less than 20 mg/m².

8. (original) The pressure sensitive adhesive article as claimed in claim 4, wherein the base material of the pressure sensitive adhesive sheet is formed from a plastic film or a lint-free paper.

9. (original) The pressure sensitive adhesive article as claimed in claim 4, wherein the pressure sensitive adhesive sheet further comprises at least one antistatic layer provided on one or both of the surfaces of the base material.

10. (previously presented) The pressure sensitive adhesive article as claimed in claim 1, wherein the pressure sensitive adhesive article is a pressure sensitive adhesive tape in which the pressure sensitive adhesive layer is provided on the second surface of the release sheet base material, wherein the pressure sensitive adhesive tape being wound in a roll form until it is used.

11. (original) The pressure sensitive adhesive article as claimed in claim 10, wherein even if the pressure sensitive adhesive tape having the pressure sensitive adhesive layer contains silicone compound, the content thereof is 500 g/m^2 or less.

12. (previously presented) The pressure sensitive adhesive article as claimed in claim 10, wherein when the pressure sensitive adhesive tape is used, the pressure sensitive adhesive tape generates a gas at a temperature of 85°C for 30 minutes, but the amount of the gas generated from the pressure sensitive adhesive tape is equal to or less than 20 mg/m^2 .

13. (original) The pressure sensitive adhesive article as claimed in claim 10, wherein when the pressure sensitive adhesive tape is used, the pressure sensitive adhesive tape contains ions of NO_x^- , Cl^- , PO_4^{3-} , F^- , K^+ , Na^+ and Ca^{2+} , but the sum of amounts of these ions is equal to or less than 20 mg/m^2 .

14. (cancelled).

15. (previously presented) The pressure sensitive adhesive article as claimed in claim 10, wherein the pressure sensitive adhesive tape further comprises at least one antistatic layer provided on one or both of the first and second surfaces of the release sheet base material.

16. (previously presented) An adhesive sheet with a release sheet comprising:
- an adhesive sheet comprising a base material and an adhesive layer provided on one surface of the base material; and
 - a release sheet comprising a release sheet base material and a release agent layer provided on one surface of the release sheet base material;
 - wherein the adhesive layer and the release sheet are in contact;
 - wherein the adhesive layer of the adhesive sheet comprises mainly a polyurethane resin;
 - wherein the release sheet base material is formed from a material selected from the group consisting of a polyester film, a polypropylene film and a lint-free paper;
 - wherein the release agent layer of the release sheet comprises mainly a polyolefin resin whose density is equal to or less than 0.94 g/cm^3 and whose numerical average molecular weight is about 15,000 to about 500,000 determined by GPC, and the polyolefin resin is selected from the group consisting of polyethylene, polypropylene, ethylene α copolymers, olefin-based thermoplastic elastomer, and a mixture of the foregoing;
 - wherein a wetting tension at the surface of the adhesive layer which faces the pressure sensitive layer measured according to the wetting tension test defined by JIS K 6768 is equal to or less than 33 mN/m;
 - wherein the polyurethane resin is obtained by reacting polyol and polyisocyanate, the polyol comprising at least one of polyester polyol and polyether polyol, and the polyisocyanate comprising at least one of aromatic polyisocyanate, aliphatic polyisocyanate, aromatic-aliphatic polyisocyanate and alicyclic polyisocyanate, and wherein an amount of the polyisocyanate to be compounded with respect to 100 parts by weight of the polyol is in the range of 1 to 30 parts by weight, and
 - wherein a mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group is larger than 1.

17. (previously presented) The adhesive sheet of claim 16, wherein the polyolefin resin is selected from the group consisting of a polyethylene resin whose density is 0.900 to 0.922 g/cm³ and an olefin-based thermoplastic elastomer whose density is 0.86 to 0.88 g/cm³.
18. (previously presented) The adhesive sheet of claim 17, wherein the olefin-based thermoplastic elastomer is selected from the group consisting of an ethylene-propylene copolymer and an ethylene-octene copolymer.
19. (cancelled)
20. (previously presented) The adhesive sheet of claim 16, wherein an adhesion enhancing layer is provided between the release sheet base material and the release agent layer.
21. (previously presented) The adhesive sheet of claim 20, wherein the adhesion enhancing layer is made of a polyethylene resin.
22. (cancelled)
23. (previously presented) The pressure sensitive adhesive article of claim 1, wherein the polyol is the polyether polyol, and the polyisocyanate is the alicyclic polyisocyanate.
24. (previously presented) The pressure sensitive adhesive article of claim 1, wherein the polyurethane resin is polyurethane-urea resin.
25. (previously presented) The adhesive sheet of claim 16, wherein the polyol is the polyether polyol, and the polyisocyanate is the alicyclic polyisocyanate.

26. (previously presented) The adhesive sheet of claim 16, wherein the polyurethane resin is polyurethane-urea resin.

27. (previously presented) The pressure sensitive adhesive article of claim 1, wherein the mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group falls within the range of 1.40 to 3.00.

28. (previously presented) The adhesive sheet of claim 16, wherein the mole equivalent of isocyanate group of the polyisocyanate with respect to one mole equivalent of active hydrogen contained in hydroxyl group of the polyol that can react with the isocyanate group falls within the range of 1.40 to 3.00.